



Welcome

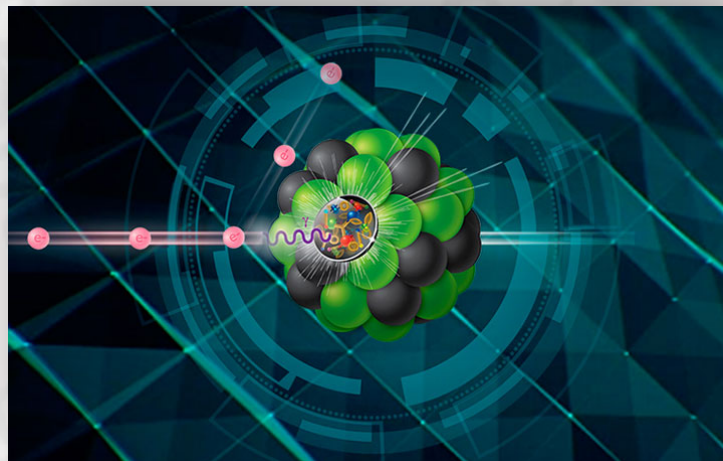
EIC Users' Group Meeting 2020

Miami Meeting

Bernd Surrow

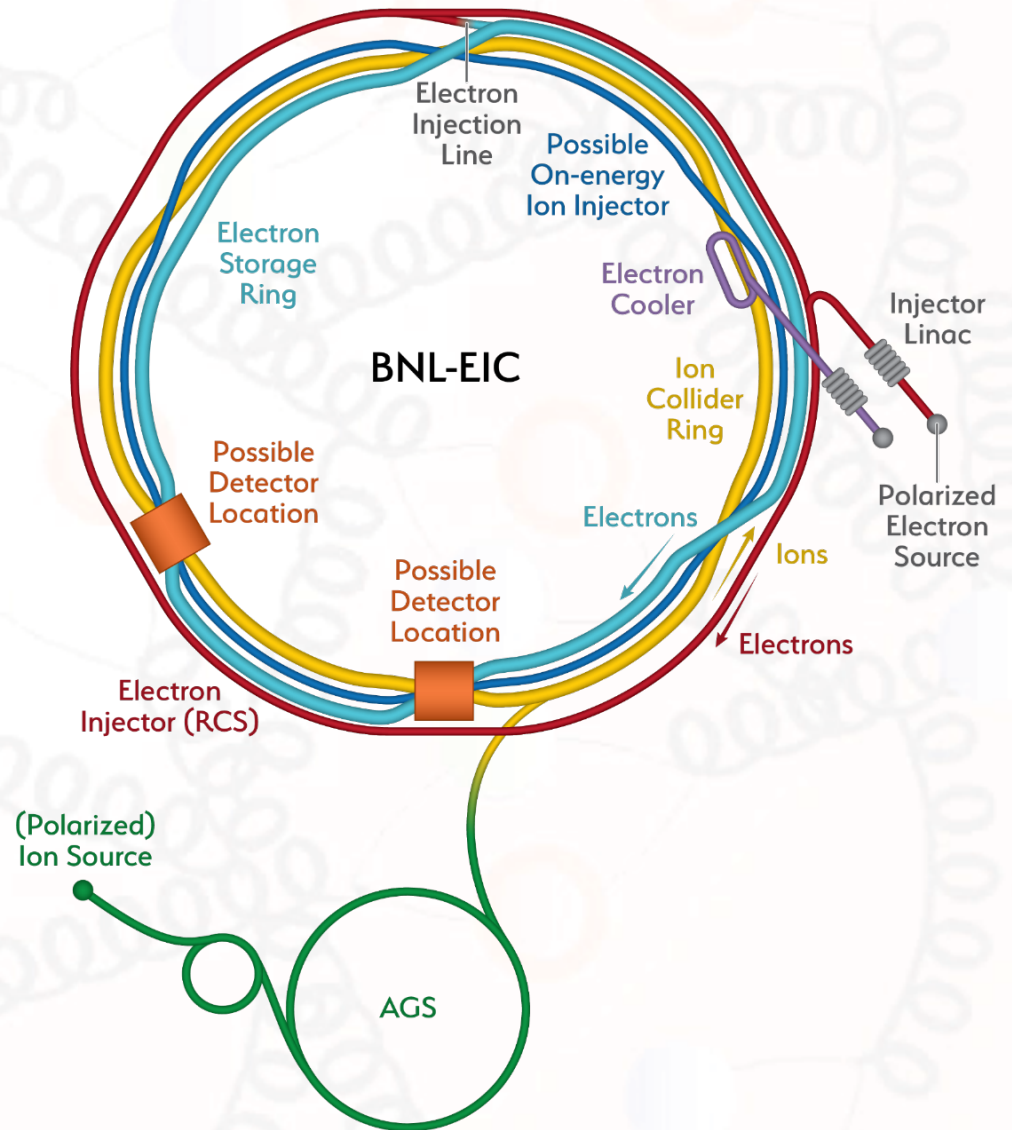


On behalf of the EICUG Steering Committee



Outline

- Welcome
- Orientation / Agenda
- EIC Project Development
- EIC Users Group Updates
- EIC Status and anticipated next steps
- Summary





Welcome

- ❑ Welcome to the [EICUG meeting 2020](#) on behalf of the EIC Users' group Steering Committee
- ❑ This is nominally what we should see around us during the summer EICUG 2020 meeting:



- ❑ We are facing an unprecedented time, in particular in the US with the COVID-19 pandemic. We hope that you are all healthy incl. your family and friends!
- ❑ Special Thanks to [Lei Guo](#), [Misak Sargsian](#), and [Wim Cosyn](#) from FIU.
- ❑ [Special welcome / thanks to funding agency and country representatives:](#)
 - [Tim Hallman](#): DOE NP Perspective on a Future Election Ion Collider
 - [Allena Oppen](#): NSF NP Perspective on a Future Election Ion Collider
 - [Country representatives](#): Bedanga Mohanty (India), Jaroslav Bielcik (Czech Republic), Andreas Schaefer (Germany), Mariusz Przybycien (Poland) and Wouter Deconinck (Canada)



Orientation / Agenda

□ Day 1

WEDNESDAY, 15 JULY		
09:50 → 12:00	Plenary Session: Wednesday Morning Session Convener: Wim Cosyn (FIU)	
10:00	Welcome / Status update EICUG Speaker: Bernd Surrow (Temple University)	⌚ 25m
10:25	EIC Project update Speaker: James Yeck (University of Wisconsin-Madison and Brookhaven National Laboratory)	⌚ 40m
11:05	EIC Machine design update Speaker: Ferdinand Willeke (BNL) willeke-EIC...	⌚ 40m
11:45	EIC Software update Speaker: Markus Diefenthaler (Jefferson Lab)	⌚ 15m
12:00 → 12:40	Break	⌚ 40m
12:40 → 14:00	Plenary Session: US Funding Agency Presentations Convener: Misak Sargsian (Florida International University)	
12:40	US Funding Agency Presentations: Department of Energy Speaker: Tim Hallman (DOE)	⌚ 40m
13:20	US Funding Agency Presentations: National Science Foundation Speaker: Allena Oppen (NSF)	⌚ 40m
14:00 → 14:20	Break	⌚ 20m
14:20 → 16:50	Plenary Session: Countries / Community representatives Convener: Bernd Surrow (Temple University)	
14:20	Countries / Community representatives: India Speaker: Bedanga Mohanty (National Institute of Science Education and Research)	⌚ 30m
14:50	Countries / Community representatives: Czech Republic Speaker: Jaroslav Bielcik (FNSPE CTU Prague)	⌚ 30m
15:20	Countries / Community representatives: Germany Speaker: Andreas Schafer (Regensburg University)	⌚ 30m
15:50	Countries / Community representatives: Poland Speaker: Mariusz Przybycien (AGH University of Science and Technology)	⌚ 30m
16:20	Countries / Community representatives: Canada Speaker: Wouter Deconinck	⌚ 30m



Orientation / Agenda

□ Day 2 Morning: IB Meeting

THURSDAY, 16 JULY			
10:00 AM → 1:01 PM	Plenary Session: IB Meeting - IB members/delegates encouraged to attend, but participation open to all		
	Conveners: Andrea Bressan, Christine Aidala (Michigan)		
10:00 AM	IB News	15m	
	Speakers: Andrea Bressan, Christine Aidala (Michigan)		
10:15 AM	Expressions of Interest Q&A	45m	
	Speakers: Dr E. C. Aschenauer (BNL), Rolf Ent (Jefferson Lab)		
11:00 AM	Discussion of upcoming call for detector proposals and collaboration formation	30m	
	Speakers: Andrea Bressan, Christine Aidala (Michigan), E. C. Aschenauer (BNL), Rolf Ent (Jefferson Lab)		
11:30 AM	Charter update discussion	30m	
	Speaker: Richard Milner (MIT)		
12:00 PM	EOI contributed presentation: Institute for Modern Physics of the Chinese Academy of Sciences + consortium of Chinese institutions	7m	
	Speaker: Dr Yuxiang Zhao (Institute of Modern Physics, Chinese Academy of Sciences)		
12:07 PM	EOI contributed presentation: CEA Saclay	7m	
	Speaker: Francesco Bossu (CEA-Saclay)		
12:14 PM	EOI contributed presentation: INFN	7m	
	Speaker: Silvia Dalla Torre (INFN, Trieste)		
12:21 PM	EOI contributed presentation: AGH U. of Science and Technology, IFJ PAN, and Temple – Forward detectors in the electron hemisphere	7m	
	Speakers: Bernd Surrow (Temple University), Janusz Chwastowski (INP PAS, Cracow), Krzysztof Piotrkowski (UCLouvain & AGH UST), Mariusz Przybycien (AGH University of Science and Technology)		
12:28 PM	EOI contributed presentation: Consortium to construct the Electron Endcap Electromagnetic Calorimeter (crystal/glass) - CUA, MIT, IPN Orsay, Kentucky, Lehigh, Notre Dame, Alikhanian National Laboratory	7m	
	Speakers: Ani Aghabekian (AANL), Carlos Munoz Camacho (UCLab, CNRS/IN2P3), Cristiano Fanelli (MIT), Douglas Hasell (MIT), Hamlet Mkrtchyan (A. Alikhanian National Science Laboratory), Ian Pegg (CUA), Renee Fatemi (University of Kentucky), Richard Milner (MIT), Rolf Ent (Lehigh University), Tanja Horn (Cath)		
12:35 PM	EOI contributed presentation: Los Alamos National Lab	7m	
	Speaker: Ivan Vitev (LANL)		
12:42 PM	EOI contributed presentation: University of California EIC Consortium	7m	
	Speaker: Miguel Arratia (University of California, Riverside)		
12:49 PM	EOI contributed presentation: Stony Brook University	5m	
	Speaker: Klaus Dehmelt (Stony Brook University)		
12:54 PM	EOI contributed presentation: Argonne National Lab	5m	
	Speaker: Sylvester Joosten (Argonne National Laboratory)		
1:01 PM → 2:00 PM	Break		59m



Orientation / Agenda

□ Day 2 Afternoon: PWG Session

1:01 PM → 2:00 PM	Break	🕒 59m
2:00 PM → 5:00 PM	Plenary Session: Yellow Report PWG Conveners: Adrian Dumitru (Dept. of Natural Sciences, Baruch College (CUNY)), Andreas Metz (Temple University), Carlos Munoz Camacho (JCLab, CNRS/IN2P3), Olga Evdokimov (UiC)	📎
2:00 PM	Inclusive reactions WG Speakers: Barak Schmookler (Stony Brook University), Renee Fatemi (University of Kentucky), nobuo sato (Jefferson Lab)	🕒 20m 📎
2:35 PM	Semi-inclusive Reactions WG Speakers: Anselm Vossen (Duke University), Bowen Xiao (Central China Normal University), Justin Stevens (William & Mary), Ralf Seidl (RIKEN), Vladimirov Alexey (Regensburg University)	🕒 20m 📎
3:10 PM	Jets, Heavy Quarks WG Speakers: Brian Page (Brookhaven National Laboratory), Ernst Sichtermann (Lawrence Berkeley National Laboratory), Frank Petriello (Northwestern University), Ivan Vitev (LANL), Leticia Cunqueiro (ORNL)	🕒 20m 📎
3:45 PM	Exclusive Reactions WG Speakers: Barbara Pasquini (University of Pavia and INFN, Pavia), Daria Sokhan, Raphael Dupre (IPN Orsay), Salvatore Fazio (Brookhaven National Laboratory), Tuomas Lappi (University of Jyväskylä)	🕒 20m 📎
4:20 PM	Diffraction Reactions & Tagging WG Speakers: Anna Stasto (Penn State University), Douglas Higinbotham (Jefferson Lab), Or Hen (MIT), Spencer Klein (LBNL), Wim Cosyn (Ghent University)	🕒 20m 📎



Orientation / Agenda

□ Day 3 Morning: DWG Session

FRIDAY, 17 JULY	
10:00 AM → 1:00 PM	Plenary Session: Yellow Report DWG Conveners: Kenneth Barish (UC Riverside), Markus Diefenthaler (Jefferson Lab), Peter Jones (University of Birmingham), Silvia Dalla Torre (INFN, Trieste), Tanja Horn (Cath)
10:00 AM	Integration, Material budget, Magnet 1) Integration issues 2) Continue discussion on material budget – include detector dead areas defined by services 3) Configurations correlated with the magnet (bore, field, etc.) - what is really needed? – pro/con for different magnets Speakers: Alexander Kiselev (BNL), William Brooks (Universidad Técnica Federico Santa María)
11:00 AM	Background level short presentation on where things are
11:20 AM	Data rates (background + signal) 1) estimating the number of channels to read, the expected rate per channel, the information to read. 2) contribution from detectors-related noise 3) hit rate in the VTX layers of the tracking detectors including background. 4) radiation dose in the VTX layers of the tracking detectors in both TID and NIEL. 5) ... Speakers: Andrea Celentano (INFN-Genova), Damien Neyret (CEA Saclay IRFU/DPhN) Slides
11:40 AM	Path towards "full detector simulations" Speakers: Kenneth Barish (UC Riverside), Peter Jones (University of Birmingham), Silvia Dalla Torre (INFN, Trieste), Tanja Horn (Cath)
12:00 PM	Detector matrix review and moving the needle forward Speakers: Kenneth Barish (UC Riverside), Peter Jones (University of Birmingham), Silvia Dalla Torre (INFN, Trieste), Tanja Horn (Cath)
12:20 PM	Path towards complementarity Speakers: E. C. Aschenauer (BNL), Paul Newman (University of Birmingham, UK)
12:50 PM	Additional topics

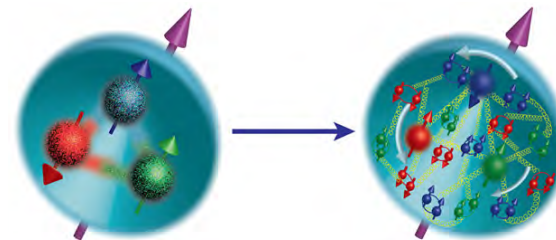


EIC Project Development

□ Core elements of EIC program

How are the sea quarks and gluons, and their spins, **distributed in space and momentum** inside the nucleon?

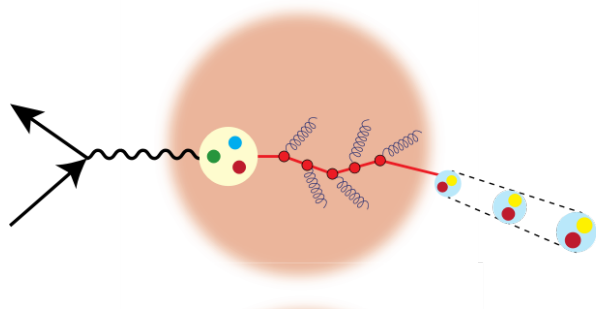
How do the **nucleon properties emerge** from them and their interactions?



How do color-charged quarks and gluons, and colorless jets, **interact with a nuclear medium**?

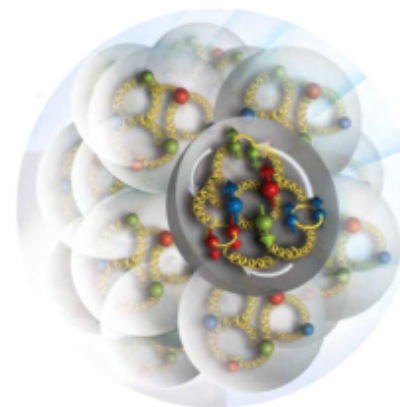
How do the **confined hadronic states emerge** from these quarks and gluons?

How do the quark-gluon **interactions create nuclear binding**?



How does a **dense nuclear environment affect** the quarks and gluons, their correlations, and their interactions?

What happens to the **gluon density in nuclei**? Does it **saturate at high energy**, giving rise to a **gluonic matter with universal properties** in all nuclei, even the proton?



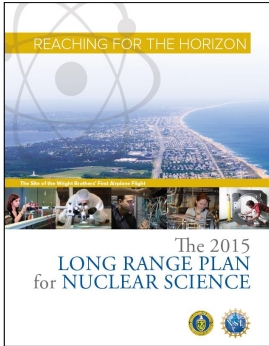
EIC Project Development

- ❑ Critical steps over the last couple of years
 - INT Workshop series / Documentation of Physics Case -
Whitepaper: "Understanding the glue that binds us all!"
 - ❑ INT Workshop: 2010
 - ❑ WP: 2012, updated in 2014 for LRP
 - 2015 Long-range plan (LRP): T. Hallman

The 2015 Long Range Plan for Nuclear Science

Recommendations:

1. Capitalize on investments made to maintain U.S. leadership in nuclear science.
2. Develop and deploy a U.S.-led ton-scale neutrino-less double beta decay experiment.
3. Construct a high-energy high-luminosity polarized electron-ion collider (EIC) as the highest priority for new construction following the completion of FRIB.
4. Increase investment in small-scale and mid-scale projects and initiatives that enable forefront research at universities and laboratories.

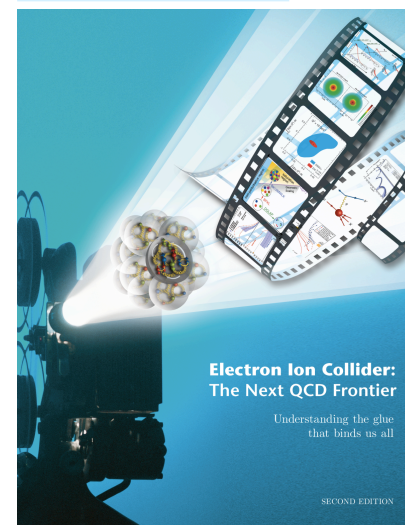


The FY 2018 Request supports progress in important aspects of the 2015 LRP Vision

U.S. DEPARTMENT OF ENERGY | Office of Science | NSAC Meeting | June 2, 2017 | 16

- Request to review EIC Science Case by National Academy of Sciences, Engineering, and Medicine (NAS)

arXiv:1212.1701



Understanding
the glue that
binds us all!

T. Hallman

Next Formal Step on the EIC Science Case is Continuing

THE NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, AND MEDICINE
Division on Engineering and Physical Science
Board on Physics and Astronomy
U.S.-Based Electron Ion Collider Science Assessment

Summary

The National Academies of Sciences, Engineering, and Medicine ("National Academies") will form a committee to carry out a thorough, independent assessment of the scientific justification for a U.S. domestic electron ion collider facility. In preparing its report, the committee will address the role that such a facility would play in the future of nuclear science, considering the field broadly, but placing emphasis on its potential scientific impact on quantum chromodynamics. The need for such an accelerator will be addressed in the context of international efforts in this area. Support for the 18-month project in the amount of \$540,000 is requested from the Department of Energy.

"U.S.-Based Electron Ion Collider Science Assessment" is now getting underway. The Chair will be Gordon Baym. The rest of the committee, including a co-chair, will be appointed in the next couple of weeks. The first meeting is being planned for January, 2017

U.S. DEPARTMENT OF ENERGY | Office of Science | NSAC Meeting | June 2, 2017 | 19

EIC Project Development

□ NAS review followed by EIC Cost and Site review

[http://www8.nationalacademies.org/onpinews/newsitem.aspx?](http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=25171&_ga=2.209086742.50427317.1532451645-138591744.4.1532451645)

[RecordID=25171&_ga=2.209086742.50427317.1532451645-138591744.4.1532451645](http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=25171&_ga=2.209086742.50427317.1532451645-138591744.4.1532451645)

- Webinar on Tuesday, July 24, 2018 - Public presentation and report release
- Gordon Baym (Co-chair): Webinar presentation

“The committee finds that the science that can be addressed by an EIC is compelling, fundamental and timely.”

- “Glowing” report on a US-based EIC facility!
- EIC Cost and Site review following NAS science review in 2018/2019

Click to
download report!

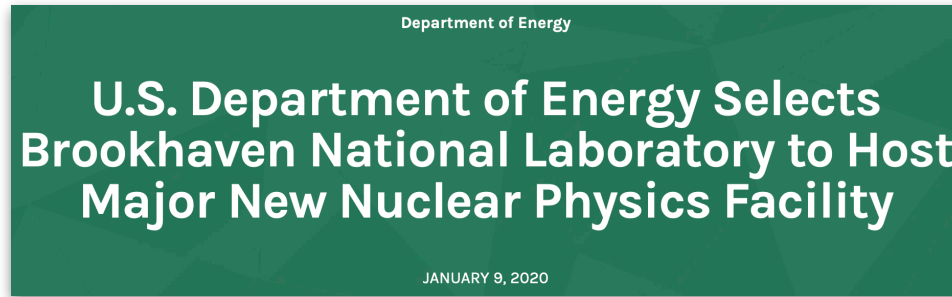
The screenshot shows the website of The National Academies of Sciences, Engineering, and Medicine. The header includes navigation links: Home, About Us, Organization, Events & Activities, Resources, and Newsroom. A search bar is located on the right. Below the header, the word "NEWS" is prominently displayed. The article title is "FOR IMMEDIATE RELEASE: A Domestic Electron Ion Collider Would Unlock Scientific Mysteries of Atomic Nuclei, Maintain U.S. Leadership in Accelerator Science, New Report Says". The article text discusses the importance of the EIC for understanding the universe and the challenges of building such a facility. It mentions that the report was commissioned by the U.S. Department of Energy (DOE) and that the committee found the science to be compelling and fundamental. The article also notes that the EIC would be a unique and powerful tool for advancing nuclear science and technology. At the bottom of the page, there are contact details for Kacey Templin, Media Relations Officer, and Joshua Blatt, Media Relations Associate.



EIC Project Development

□ Announcement by the Department of Energy on January 9, 2020

<https://www.energy.gov/articles/us-department-energy-selects-brookhaven-national-laboratory-host-major-new-nuclear-physics>



WASHINGTON, D.C. – Today, the U.S. Department of Energy (DOE) announced the selection of Brookhaven National Laboratory in Upton, NY, as the site for a planned major new nuclear physics research facility. The Electron Ion Collider (EIC), to be designed and constructed over ten years at an estimated cost between \$1.6 and \$2.6 billion, will smash electrons into protons and heavier atomic nuclei in an effort to penetrate the mysteries of the “strong force” that binds the atomic nucleus together.



EIC Project Development

□ Press release by JLab and BNL

JEFFERSON LAB TO BE MAJOR PARTNER IN ELECTRON ION COLLIDER PROJECT

The Department of Energy announced that Jefferson Lab will collaborate on plans to build a future Electron Ion Collider in New York

NEWPORT NEWS, VA – The Department of Energy announced that it has taken the next step toward construction of an Electron Ion Collider (EIC) in the United States. DOE announced on Thursday that the collider will be sited at DOE's Brookhaven National Laboratory in Upton, N.Y. In addition, DOE's Thomas Jefferson National Accelerator Facility will be a major partner in realizing the EIC, providing key support to build this next new collider, which will be the most advanced particle collider of its type ever built.

<https://www.jlab.org/news/releases/jefferson-lab-be-major-partner-electron-ion-collider-project>

U.S. Department of Energy Selects Brookhaven National Laboratory to Host Major New Nuclear Physics Facility

January 9, 2020



The Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory will provide crucial infrastructure for the new Electron Ion Collider.

[+ENLARGE](#)

WASHINGTON, D.C. – Today, the U.S. Department of Energy (DOE) announced the selection of Brookhaven National Laboratory in Upton, NY, as the site for a planned major new nuclear physics research facility.

<https://www.bnl.gov/newsroom/news.php?a=116996>

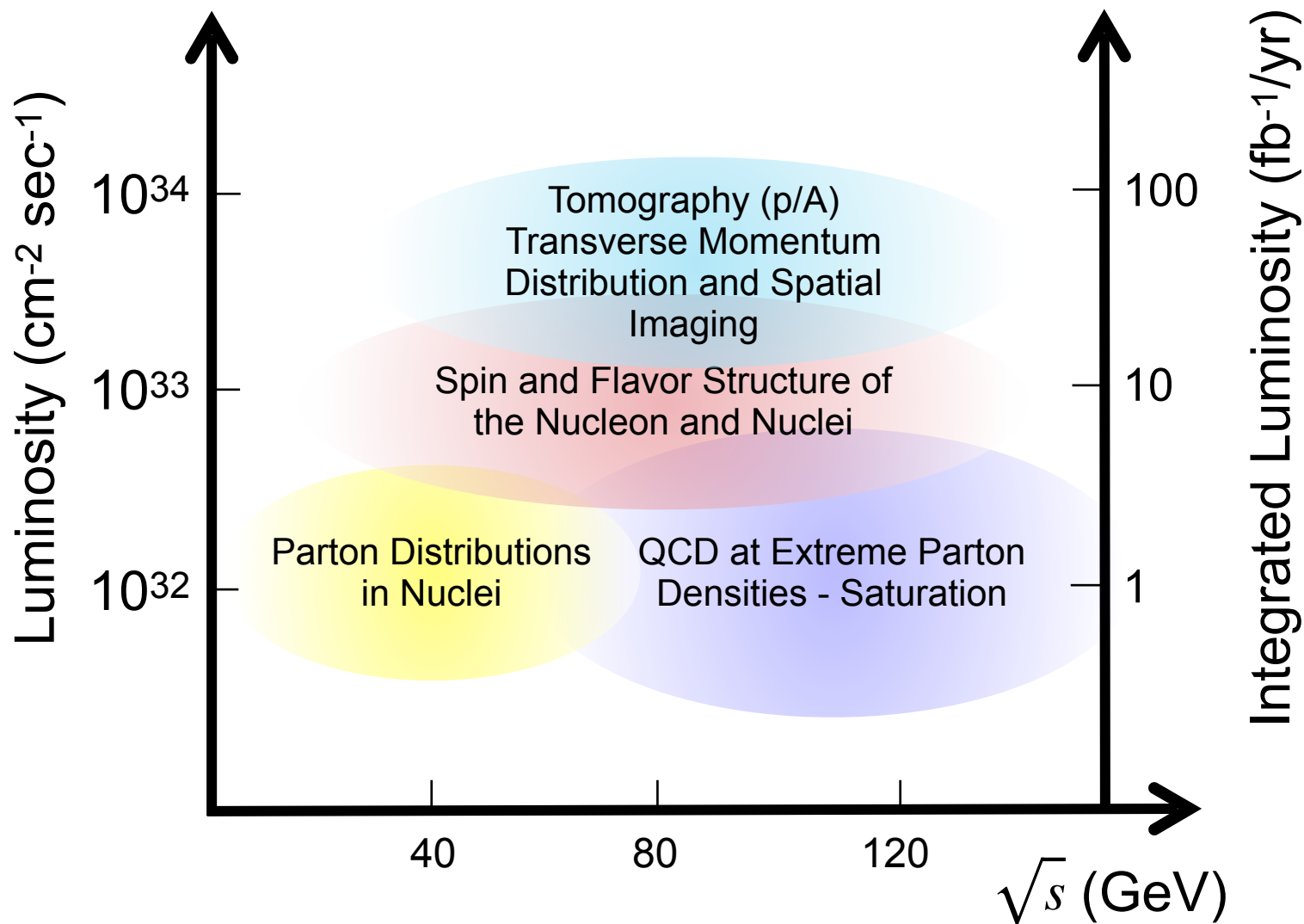


EIC Project Development

□ EIC Physics

Pillars:

Structure
and dynamics
of matter at
high
luminosity,
high energy
with
polarized
beams and
wide **range of**
nuclei



EIC Project Development

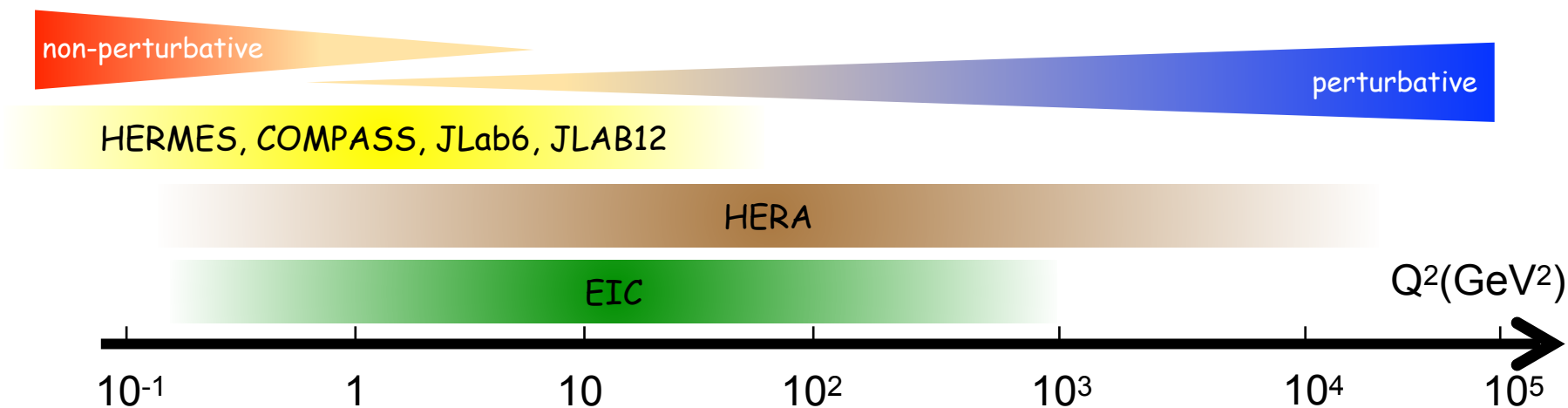
□ Requirements

○ Machine:

- **High luminosity:** $10^{33}\text{cm}^{-2}\text{s}^{-1} - 10^{34}\text{cm}^{-2}\text{s}^{-1}$
- **Flexible center-of-mass energy** $\sqrt{s} = \sqrt{4 E_e E_p}$: **Wide kinematic range** $Q^2 = s x y$
- **Highly polarized** electron (0.8) and proton / light ion (0.8) **beams:** **Spin structure studies**
- **Wide range of nuclear beams** (p to U): **High gluon density**

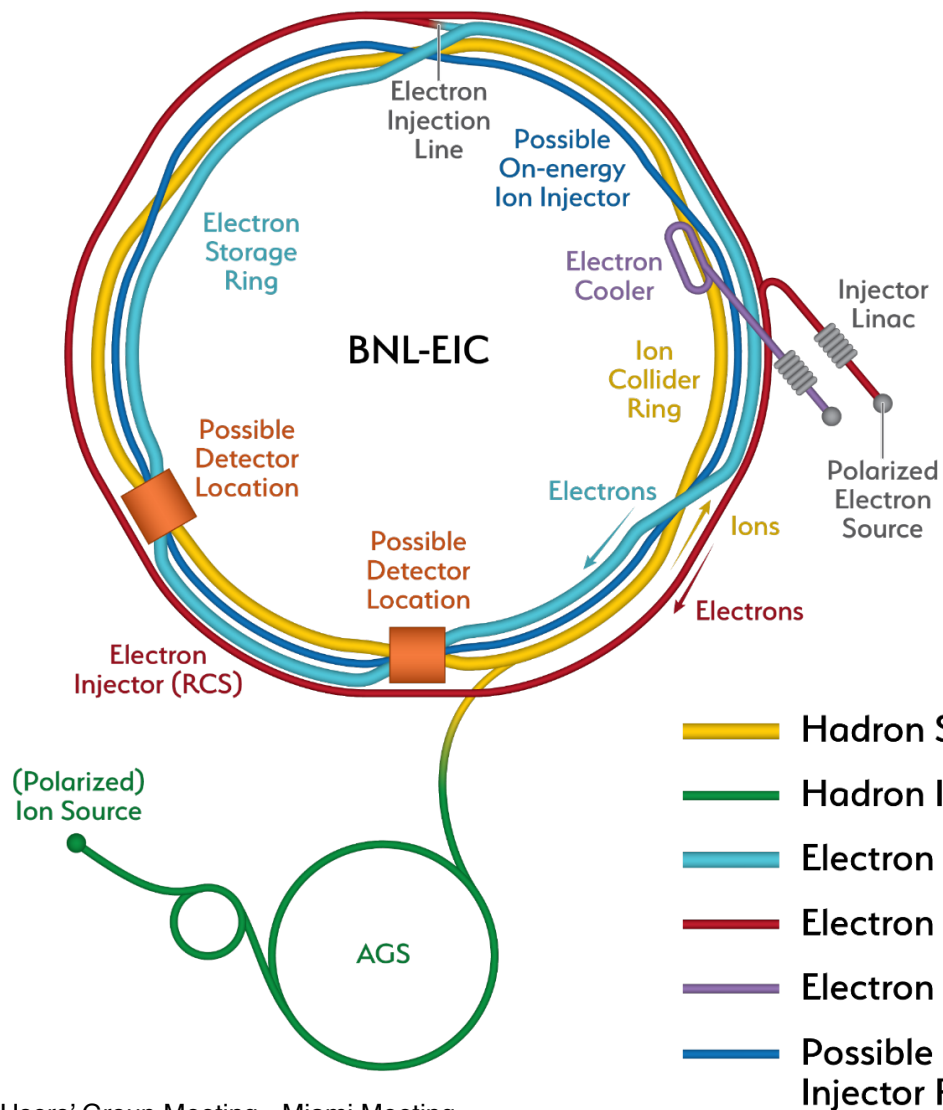
○ Detector:

- **Wide acceptance** detector system including **particle ID** (e/h separation & π , K, p ID - flavor tagging)
- **Instrumentation for tagging of protons** from elastic reactions and neutrons from nuclear breakup: **Target / nuclear fragments** in addition to **low Q^2 tagger / polarimetry and luminosity (abs. and rel.) measurement**



EIC Accelerator Design

□ EIC accelerator design

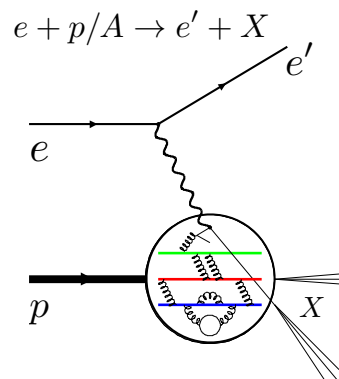


- Center of Mass Energies: 20 GeV - 141 GeV
- Maximum Luminosity: $10^{34} \text{ cm}^{-2}\text{s}^{-1}$
- Hadron Beam Polarization: 80%
- Electron Beam Polarization: 80%
- Ion Species Range: p to Uranium
- Number of interaction regions: Up to two

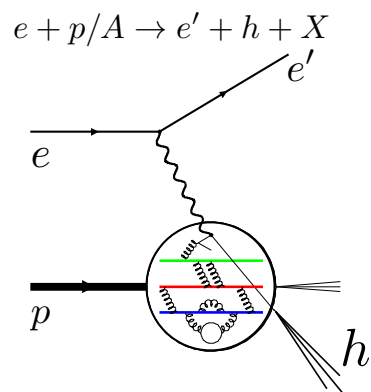
EIC Project Development

□ Overview of processes and final states

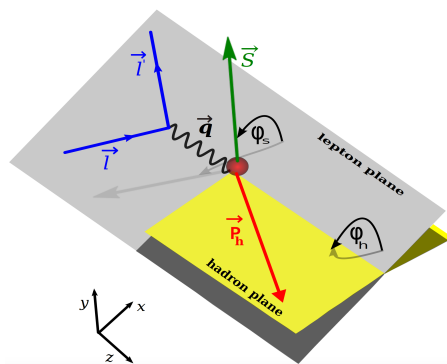
arXiv:1212.1701



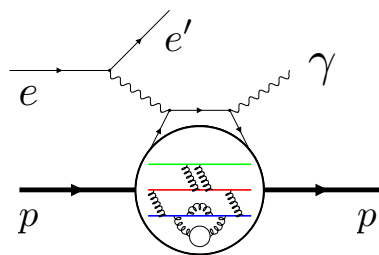
Inclusive DIS



Semi-Inclusive DIS (SDIS)



$e + p/A \rightarrow e' + N'/A' + \gamma/m$



Deeply-Virtual Compton Scattering (DVCS)

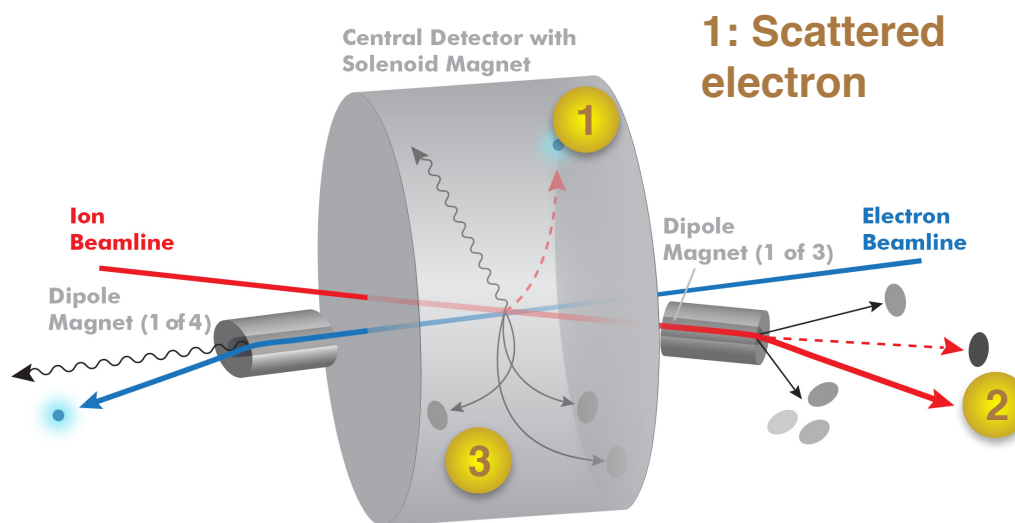
- **Inclusive:** Unpolarized $f_i(x, Q^2)$ and helicity distribution $\Delta f_i(x, Q^2)$ functions through unpolarized and polarized structure function measurements (F_2 , F_L , g_1)
- Define kinematics (x , y , Q^2) through electron (e-ID and energy+angular measurement critical) / hadron final state or combination of both depending on kinematic x - Q^2 region
- **SDIS:** Flavor tagging through hadron identification studying FF / TMD's (Transverse momentum, k_T , dependence) requiring azimuthal asymmetry measurement - Full azimuthal acceptance
- **Heavy flavor** (charm / bottom): Excellent secondary vertex reconstruction
- **Exclusive:** Tagging of final state proton using Roman pot system studying GPD's (Impact parameter, b_T , dependence) using DVCS and VM production
- **eA:** Impact parameter determination / Neutron tagging using Zero-Degree Calorimeter (ZDC)

EIC Project Development

□ Overview of gener

arXiv:1212.1701

3: Nuclear and nucleonic fragments / scattered proton



- **Acceptance:** Close to 4π coverage with a η -coverage ($\eta = -\ln(\tan(\theta/2))$) of approximately $\eta < |3.5|$ combined calorimetry (EM CAL and hadron CAL at least in forward direction) and tracking coverage
- **Low dead material** budget in particular in rear direction ($\sim 5\% X/X_0$)
- **Good momentum resolution** $\Delta p/p \sim \text{few } \%$
- **Electron ID** for e/h separation varies with θ / η at the level of $1:10^4 / \sim 2\text{-}3\%/\sqrt{E}$ for $\eta < -2$ and $\sim 7\%/\sqrt{E}$ for $-2 < \eta < 1$

- **Particle ID** for $\pi/K/p$ separation over wide momentum range (Forward η up to $\sim 50\text{ GeV}/c$ / Barrel η up to $\sim 4\text{ GeV}/c$ / Rear η up to $\sim 6\text{ GeV}/c$)
- **High spatial vertex resolution** $\sim 10\text{-}20\mu\text{m}$ for vertex reconstruction
- **Low-angle taggers:**
 - Recoil proton
 - Low Q^2 electron
 - Neutrons on hadron direction
- **Luminosity** (Absolute and relative) and **local polarization direction measurement**



EIC Project Development

□ Generic Detector R&D program for an EIC

- In January 2011, BNL, in association with JLab and the DOE Office of NP, announced a **generic detector R&D program to address the scientific requirements for measurements at a future EIC facility.**
- **Goals:**
 - **Enable successful design and timely implementation of an EIC experimental program**
 - **Develop instrumentation solutions** that meet realistic cost expectations
 - **Stimulate the formation of user collaborations** to design and build experiments
- **Peer-reviewed program funded by DOE and managed by BNL with \$1M/year to \$1.5M/year Initiated and coordinated by Tom Ludlam (BNL) until 2014 / Since 2014 coordinated by Thomas Ullrich (BNL)**
- **Key to success: Standing EIC Detector Advisory Committee**
 - **Current members:** Marcel Demarteau (ANL), Carl Haber (LBNL), Peter Krizan (Ljubljana), Ian Shipsey (Oxford), Rick van Berg (UPenn), Jerry Va'vra (SLAC) and Glenn Young (JLab)
 - **Past members:** Robert Klanner (Hamburg) and Howard Wieman (LBL)
- **Wide range of R&D programs:** Calorimetry / Tracking (GEM, MicroMegas, TPC) incl. silicon / Particle ID (TRD, Dual-RICH, Aerogel RICH, DIRC, TOF) / Polarimetry / Background / Simulation Tools /

https://wiki.bnl.gov/conferences/index.php/EIC_R%25D

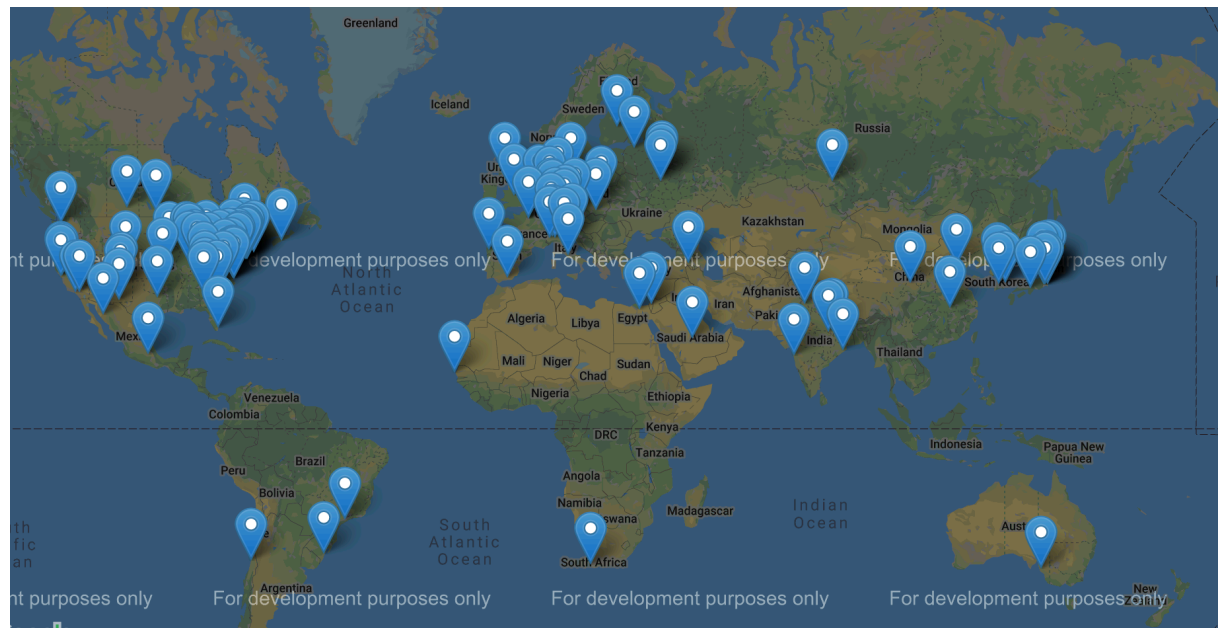
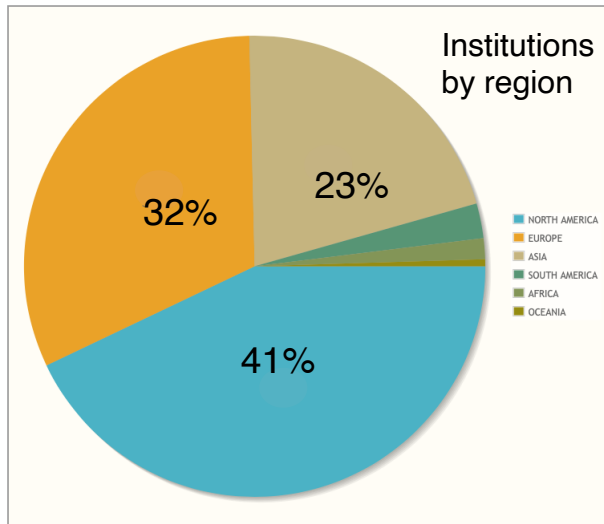
Next meeting: July 23, 24, and 27!

Bernd Surrow

EICUG Updates

Size and demographics

- EICUG organization established in summer 2016
- In numbers....: **1092 members** (Experimental scientists: 658 / Theory scientists: 280 / Accelerator scientists: 147 / Support: 3 / Other: 4), 230 institutions, 31 countries, 6 world regions
- World map:





EICUG Updates: Organization / Terms

□ Institutional Board:

- **Chair:** Christine Aidala (University of Michigan, USA), term January 2019 - December 2020
- **Vice Chair:** Andrea Bressan (INFN Trieste), term January 2019 - December 2020

□ Steering Committee Members:

- **Chair:** Bernd Surrow (Temple University, USA), term September 2019 - August 2021
- **Vice Chair:** Richard Milner (MIT, USA), term September 2019 - August 2021
- **At Large Members:**
 - John Arrington (Argonne National Laboratory, USA), term January 2019 - December 2020
 - Marco Radici (INFN - Pavia, Italy), term January 2019 - December 2020
 - Barbara Jacak (LBL and UCB, USA), term January 2020 — December 2021
- **European Representative:**
 - Daniel Boer (University Groningen, NL), term September 2019 - August 2021
- **International Representative:**
 - Yuji Goto (Riken, Japan), term April 2018 -- March 2020
- **Lab Representatives:**
 - Thomas Ullrich (Brookhaven National Laboratory, USA)
 - Rolf Ent (Thomas Jefferson National Accelerator Facility, USA)

<http://eicug.org/web/content/electron-ion-collider-users-group-eicug>



EICUG Updates: Charter Committee

- EICUG Charter: <http://www.eicug.org/web/sites/default/files/EICUG-Charter-01122018.pdf>

"When wording of a CDO mission statement for the EIC project has been decided by the funding agencies, the SC chair will appoint a new charter committee whose members will, within 6 months of its formation, present a draft charter for Phase 2 to be approved by two-thirds majority of the IB."

- New charter writing committee: John Arrington (Argonne Nat. Lab. - US), Will Brooks (USM Valparaiso, Chile), Olga Evdokimov (Univ. of Illinois, Chicago - US), Yuji Goto (RIKEN, Japan), Barbara Jacak (LBNL & Univ. California at Berkeley - US), **Richard Milner (MIT - US) (Co-chair)**, Marco Radici (INFN Pavia, Italy), **Franck Sabatié (Saclay, France) (Co-chair)**, Sevil Salur (Univ. Rutgers - US) and Daria Sokhan (Univ. Glasgow, UK)
- Survey was circulated to IB - Discussion during Day 2 IB meeting led by Richard Milner and France Sabatié



EICUG Updates: E&N Committee

- Elections and Nominating Committee: Term September 2019 - August 2020
 - **Chair:** Christian Weiss (Chair) / Marta Ruspa (Vice Chair)
 - **Members:**
 - Abhay Deshpande (SBU/BNL, USA)
 - Yuri Kovchegov (OSU, USA)
 - Paul Newman (University of Birmingham, UK)
 - Marta Ruspa (INFN Torino, Italy)
 - Christian Weiss (Thomas Jefferson National Accelerator Facility, USA)
 - International Representative election has been completed with two candidates:
 - Bedanga Mohanty (National Institute of Science Education and Research, India)
 - Wouter Deconinck (University of Manitoba, Canada)
 - The results will be announced later today.
 - New committee assembled in late summer.

<http://eicug.org/web/content/electron-ion-collider-users-group-eicug>



EICUG Updates: Talks committee

- Elections and Nominating Committee: Term September 2019 - August 2020
 - Chair: Ralf Seidl (RIKEN)
 - Members:
 - Carlos Munoz Camacho (Orsay, France)
 - Barbara Pasquini (INFN Pavia, Italy)
 - Dmitry Romanov (JLab, USA)
 - Sevil Salur (Rutgers University, USA)
 - Ralf Seidl (RIKEN, Japan) International Representative election has been completed with two candidates:
 - Information on past / upcoming conferences on EICUG WWW-page
 - New committee assembled in late summer.

<http://eicug.org/web/content/electron-ion-collider-users-group-eicug>



EIC Project Status & Anticipated Next Steps

□ Yellow Report Activity

WWW-page: www.eicug.org

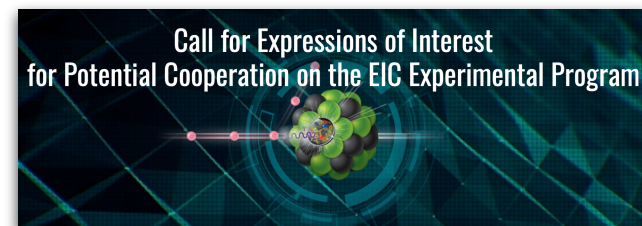
- Effort to **advance the state and detail of requirements and detector concepts** in preparation of the EIC realization (Detector and Physics Working groups)
- Effort planned for **1 year with 4 dedicated workshops** summarized in Yellow Report - Important input for conceptual and technical design report
- Expect **formation of collaborations following Yellow Report effort in 2021**

□ Detector Design

- **Strong desire for 2nd detector**
- **Complementary design efforts** for 2 detectors (See e.g. HERA program with H1/ZEUS)

□ EIC project

- **EIC project management in place** since April 1, 2020
- EIC Project Director: Jim Yeck (BNL)
- EIC Deputy Project Director and Technical Director: Ferdinand Willeke (BNL)
- Call for **Expression of Interest (EOI)**: <https://www.bnl.gov/eic/EOI.php>
- **Preparation for CD1 in spring 2021: More details by Jim Yeck (BNL)**



Summary

- **EIC Physics Pillars:** EIC facility will address fundamental questions on the structure and dynamics of nucleons and nuclei in terms of quarks and gluons using precision measurements including:
 - Parton Distributions in Nuclei / QCD at Extreme Parton Densities - Saturation
 - Spin and Flavor Structure of the Nucleon and Nuclei
 - Tomography (p/A) Transverse Momentum Distribution and Spatial Imaging
- **EIC Facility at BNL under BNL/JLab partnership / International contributions critical!**
- **The terms for several EICUG committee members will end in 2020. Please contact us with suggestions including yourself!**
- **EIC Status and Next Steps:**
 - Awarded CDO mission statement / Site selection
 - EIC Project management in place
 - Yellow report effort: 1 year effort - 4 planned workshops
 - Expression of Interest
 - Preparation for CD1 in spring 2021 followed by collaboration formation / call for detector proposals!

